

Abstract of the Disclosure

An apparatus and method for controlling the flow of a process material from a higher pressure environment to a lower pressure environment is provided. Each of a first and second chamber is divided into a product region and a control region by a flexible boundary. Inlet and outlet flow control devices provide fluid communication between each product region and a material input line and a material output line, respectively. A chamber control device is arranged to provide fluid communication between the control region of each chamber, which is filled with a non-compressible fluid. As product fills the product region of one chamber, fluid is displaced from the corresponding control region and into the control region of the other chamber. As the control region of the other chamber expands, product is forced out of the corresponding product region and into the material output line. The product region of each chamber is alternately filled and emptied to produce a continuous transport of material.